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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Simplification of the Depreciation Prescription Process	)	CC Docket No. 92-296
	)	

COMMENTS OF U S WEST COMMUNICATIONS, INC.

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December 17, 1993

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SUMMARY

U S WEST recommends that the Commission adopt ranges of lives which are developed using realistic forward-looking lives for all investment accounts. The use of forward-looking lives is an explicit recognition that the competitive, regulatory, and technological environments in which local exchange carriers operate are changing rapidly.

If the Commission, for whatever reasons, decides to continue using historical data in establishing ranges, it must take the three following steps to ensure that use of the Basic Factors Range option is something more than "business as usual." These steps are:

1. The proposed ranges of lives must be expanded to include all accounts. Of special importance are digital switching, digital circuit and buried cable-metallic accounts where the Commission has already informally used ranges.

2. The proposed ranges should be expanded to include all currently-prescribed lives.

3. Ranges should be calculated using the most current prescription available for a given type of equipment.

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U S WEST Communications, Inc. ("U S WEST"), through counsel, hereby submits its comments in response to the Federal Communications Commission's ("Commission") Order Inviting Comments.[1] In its Order, the Commission invited comments on proposed projection life and future net salvage ranges for selected accounts.

The proposed ranges in the Commission's Order represent the first step in implementing the Basic Factors Range ("BFR") option which it prescribed for price cap local exchange carriers ("LEC") in its Depreciation Simplification Order.[2] U S WEST continues to believe that the "Price Cap Option" is the most appropriate depreciation methodology for price cap LECs and that the BFR option in its present form is a "distant" second best option.[3] With this caveat in mind, U S WEST now comments on the Commission's proposed ranges.

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[1] In the Matter of Simplification of the Depreciation Prescription Process, CC Docket No. 92-296, Order Inviting Comments, rel. Nov. 12, 1993 ("Order").

[2] In the Matter of Simplification of the Depreciation Prescription Process, CC Docket No. 92-296, Report and Order, rel. Oct. 20, 1993 ("Depreciation Simplification Order").

[3] See Petitions for Reconsideration filed herein by the United States Telephone Association ("USTA") on Dec. 3, 1993, and by U S WEST on Dec. 6, 1993.

I. RANGES SHOULD BE ESTABLISHED FOR ALL ACCOUNTS

Depreciation simplification will have eluded the Commission unless the BFR option is immediately expanded to include all accounts. The Commission's Order proposes ranges for 22 accounts which cover approximately 30 percent of U S WEST's investment.[4] No ranges have been proposed for the remaining accounts which comprise approximately 70 percent of U S WEST's investment - as is illustrated by Table A.

[4]However, only 20 percent of U S WEST's investment has prescribed lives that fall within the Commission's proposed ranges. Furthermore, when Circuit - Analog and underground cable accounts which fall within Commission ranges -- but have totally unrealistic prescribed lives -- are removed, less than 10 percent of U S WEST's investment is covered by the Commission's proposal.

TABLE A

U S WEST Communications

Accounts **With** Proposed Ranges:

Account Number	Class of Plant	Investment Proportion with FCC Proposed Range %
2112	Motor Vehicles	1.23
2113	Aircraft	0.02
2114	Special Purpose Vehicle	0.00
2115	Garage Work Equipment	0.03
2116	Other Work Equipment	0.66
2122	Furniture	0.53
2123.1	Office Equipment	0.18
2123.2	Computer Communications Equipment	0.67
2124	Computers	5.75
2231	Radio	1.53
2232	Circuit DDS	0.23
2232	Circuit Analog	3.90
2351	Public Telephone	0.39
2362	Other Term Equipment	0.81
2421	Aerial Cable-Non-Metallic	0.02
2422	Underground Cable-Metallic	7.07
2422	Underground Cable-Non-Metallic	1.16
2423	Buried Cable-Non-Metallic	1.29
2424	Sub Cable-Metallic	0.03
2424	Sub Cable-Non-Metallic	0.00
2441	Conduit Systems	4.95
	TOTAL:	30.44

TABLE A (continued)

U S WEST Communications
Accounts **Without** Proposed Ranges:

Account Number	Class of Plant	Investment Proportion with FCC Proposed Range %
2121	Buildings	8.27
2211	Analog ESS	8.16
2212	Digital ESS	10.89
2215.1	Step by Step	0.64
2215.2	Crossbar	0.23
2220	Operator Sys	0.15
2232	Circuit Digital	13.38
2411	Pole Lines	0.86
2421	Aerial Cable-Metallic	3.18
2423	Buried Cable-Metallic	22.55
2426	Intra Building Cable-Metallic	1.10
2426	Intra Building Cable-Non-Metallic	0.03
2431	Aerial Wire	0.13
	TOTAL:	69.56

Among the accounts where no ranges have been proposed are digital switch (Account No. 2212), digital circuit (Account No. 2232) and buried cable-metallic (Account No. 2423), which make up approximately 47 percent of U S WEST's investment. These accounts are also the accounts most affected by competition and technological change.

While U S WEST recognizes that the Commission has limited resources, much of the work necessary to create ranges for key network accounts has already been done. The Telecommunications Technology Forecasting Group ("TTFG"), a consortium of LECs in the United States and Canada, has sponsored extensive research on

the implications of technological change on network equipment lives and prepared forecasts of these lives. This information is available to the Commission for use in establishing ranges of lives for key network accounts.[5]

Additionally, the Commission has already been using ranges, albeit informally, in the prescription of lives for the digital switching, digital circuit, and buried cable accounts. It is unclear why the Commission did not use these existing ranges as a starting point in this proceeding. Table B shows the projection lives prescribed for these three accounts for the 26 jurisdictions re-prescribed in 1993.

TABLE B

Projection Life

Account	Range (Years)	No. of Jurisdictions
Digital Switching	16-18	26 of 26
Digital Circuit	11-13	25 of 26
Buried Cable-Metallic	20-23	18 of 26

These ranges represent a step in the right direction, even though they still exceed the lives that U S WEST believes are

[5]The TTFG commissioned Technology Futures, Inc. ("TFI"), to conduct this research. TFI's studies can be used as a basis for establishing forward-looking ranges of lives in this proceeding. A summary and explanation of TFI's recent studies is contained in USTA's comments filed herein Dec. 17, 1993, in response to the Commission's Order. U S WEST fully supports TFI's findings and urges the Commission to use them in establishing ranges of lives for key network accounts. U S WEST's proposals herein are consistent with and supported by TFI's research.

more realistic -- that is, 10 years for digital switching and digital circuit and 20 years for buried cable. At a minimum, the Commission should allow LECs to employ the ranges in Table B without submitting studies for these accounts.

II. THE COMMISSION'S PROPOSED RANGES SHOULD BE EXPANDED TO INCLUDE ALL CURRENTLY-PRESCRIBED LIVES

The Commission's proposal requires LECS to submit studies for equipment lives that have been prescribed by the Commission -- but do not fall within the proposed ranges. This is not a good use of either the Commission's or LECs' resources. At a minimum, the Commission should expand its ranges to encompass all currently-prescribed lives.[6]

III. ONLY THE MOST CURRENT PRESCRIPTIONS SHOULD BE USED IN CALCULATING RANGES

The Commission's proposed range of lives is based on currently-prescribed lives -- some of which are three years old. This approach makes sense only if previously-prescribed lives were appropriate and the future is expected to mirror the past (i.e., stable business and regulatory environments and a constant rate of technological change). The Commission will be unable to achieve its competitive goals and will unfairly handicap LECs if

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[6]Even this approach still has the perverse effect of limiting the flexibility of companies that have aggressively upgraded their network infrastructure and, thereby, obtained the lowest prescribed lives. This problem can be overcome only by expanding the range of lives even further to accommodate forward-looking lives.

it allows the "dead hand" of past prescriptions to control the establishment of current and future ranges of lives.[7] Therefore, U S WEST strongly advocates that the Commission employ forward-looking lives in establishing ranges. However, if the Commission declines to do so, it should use only the most recent prescriptions in establishing ranges. It makes no sense to use outdated prescriptions in calculating ranges. Including outdated prescriptions is the equivalent of using "misinformation" and further aggravates the inherent bias in using historical rather than forward-looking lives. Therefore, the Commission should use only its most current prescriptions in establishing ranges if it declines to use forward-looking lives.

IV. THE COMMISSION'S PROPOSED RANGE OF LIVES SHOULD BE MODIFIED TO REFLECT CURRENT EXPECTATIONS OF FUTURE LIVES

The Commission must expand its proposed range of lives to allow LECs to use more realistic forward-looking lives. In the sections which follow, U S WEST proposes forward-looking lives for key network accounts. U S WEST's proposed lives are not just hypothetical lives; they are the lives that U S WEST adopted for financial reporting purposes when it discontinued following FAS-

[7]The use of historical data in calculating proposed ranges is biased in that the Commission has not used its most current prescriptions but has given equal weight to outdated prescriptions. For example, life for underground cable-metallic is 29 years in Arizona, Colorado, New Mexico, Utah and Wyoming (i.e., 1991 re-prescription) and 25-27 years in Idaho, Montana, Oregon and Washington (i.e., 1993 re-prescription).

71 in September, 1993.[8] In adopting these shorter market-based new lives, U S WEST booked a pre-tax charge of $5.1 billion. The Commission should give great weight to U S WEST's lives in establishing ranges in this proceeding. U S WEST's discontinuance of FAS-71 and associated accounting adjustment is a telling reminder of the inadequacy of the Commission's prescribed lives. The Commission should allow LECs adopting different lives for financial reporting purposes to use those same lives for regulated accounts.

U S WEST's proposed lives are summarized in Table C and explained in greater detail in the sections which follow.

TABLE C

U S WEST Communications Accounts with Proposed Ranges:	LIVES	
Class of Plant	U S WEST Proposed Lower Bound	FCC Range Proposal
Computers	5	6-8
Circuit Analog	5	8-11
Underground Cable-Metallic	15	25-30
All Fiber Accounts	20	25-30

[8] See U S WEST News Release, "U S WEST to Adopt Competitive Accounting Methods for Financial Reporting and to Record Special Charge for Customer Service Improvements," Sep. 17, 1993.

TABLE C (continued)

U S WEST Communications Accounts Without Proposed Ranges:	LIVES	
Class of Plant	U S WEST Proposed Lower Bound	FCC Range Proposal
Digital ESS	10	None
Circuit Digital	10	None
Aerial Cable-Metallic	15	None
Buried Cable-Metallic	20	None

A. Computers

The Commission should reduce the lower bound of its proposed range of lives for computers. At a minimum, the lower bound should not exceed five years. Product development cycles in the computer industry have continued to shorten while speed and capacity grow.[9] The net result is that the economic life of computers has been drastically reduced over time. The combination of technological change and declining prices of computer equipment has further accelerated the decline in economic life. As such, even a five-year life for computer equipment is exceedingly conservative.

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[9]For example, microchip development cycle times are decreasing, making obsolete current and past computer investments. The leading chip developer, Intel, is accelerating its rate of new product introductions. "Intel is no longer content to introduce one or two new-generation chips annually and a whole new microprocessor family every three of four years. . . . For most of the '90s, Intel expects to give birth to new chip families every two years, a blistering pace." See Robert D. Hof, Inside Intel: It's Moving at Double-Time to Head Off Competitors, Bus. Wk., June 1, 1992, at 87.

B. Digital Switches

U S WEST recommends, and industry studies demonstrate, that the expected life of a digital switch should not exceed 10 years. A digital switch is basically a special purpose computer. As such, digital switches are affected by the same technological forces as is the computer industry as a whole, in addition to unique industry trends in telecommunications. TFI conducted an analysis of the life of new digital switches for USTA for presentation to the U.S. Treasury Department. This analysis found the life of new digital switches to be 7.8 years,[10] as shown in Table D. Using a similar methodology, U S WEST determined that its digital switches had an expected composite life of 8.7 years.

TABLE D

INDUSTRY-WIDE - LIFE Development for Digital Switching:

Switch Component	Investment Proportion		Component Life - Years		Weighted Life - Years
Processor/Memory	.24	x	5.1	=	1.22
Switching Network	.05	x	7.3	=	0.37
Trunk Interface	.17	x	7.0	=	1.19
Line Interface	.41	x	8.0	=	3.28
Shell	.10	x	15.0	=	1.50
Miscellaneous	.03	x	7.8	=	0.23
Composite Weighted Life					7.8 years

Source: Average Projection Lives of Digital Switching and Circuit Equipment, by L.K. Vanston, B.R. Kravitz, and R.C. Lenz, Technology Futures, Inc., March 1992.

[10]TFI recently updated this study and found the life to be 7.6 years. This update is included in USTA's Comments filed herein Dec. 17, 1993, at Attachment 2.

TABLE D (continued)

USWC - LIFE Development for Digital Switching:

Switch Component	Investment Proportion		Component Life - Years		Weighted Life - Years
Processor/Memory	.17	x	6.5	=	1.11
Switching Network	.06	x	10.0	=	0.60
Trunk Interface	.17	x	7.0	=	1.19
Line Interface	.41	x	8.0	=	3.28
Shell	.14	x	15.0	=	2.10
Miscellaneous	.05	x	7.8	=	0.44
Composite Weighted Life					8.7 years

Both of these studies demonstrate that the use of a 10-year life is not unreasonable. As such, U S WEST recommends that the Commission establish a range of lives for digital switches which includes a 10-year life.

C. Circuit - Digital

Circuit equipment is electronic equipment used to transmit electrical signals over network media. Most of the circuit equipment currently in service is used to transmit and receive signals over copper cable. Much of the existing circuit equipment will have to be replaced as more fiber is deployed throughout the network and higher bandwidth services are introduced.

Two recent industry-sponsored research studies demonstrated the inadequacies of the current transmission electronics. The first study presented a technology forecast that demonstrated that a life of less than six years is appropriate for circuit

equipment.[11] The second investigation forecast demand for new services that required greater switched bandwidth than was available on current telephony networks.[12] This study found that among the many technological changes required in the network to accommodate higher bandwidth services (e.g., SONET) was the replacement of existing circuit equipment. This study shows that a life of 10 years or less is justified for digital circuit equipment.

U S WEST's decision to build a broadband network and similar announcements by other LECs are consistent with industry studies and substantiate their conclusions. Therefore, U S WEST proposes that the lower bound of the range of lives for the Circuit - Digital account be set at 10 years or less.

D. Circuit - Analog

Analog circuit equipment is clearly obsolete and has no place in the networks of the future. At this point, most of the investment in this account is in test equipment (i.e., because of ongoing retirements of most equipment used to provide customer service). This is a dying account. The life of this account will continue to shorten as we approach the retirement date for all circuit-analog investment. Clearly, the Commission's lower

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[11]L.K. Vanston, B.R. Kravitz, and R.C. Lenz, Average Projection Lives of Digital Switching and Circuit Equipment, Technology Futures, Inc., March, 1992.

[12]L.K. Vanston, New Telecommunications Services and the Public Telephone Network, Technology Futures, Inc., 1993.

bound of eight years for its proposed range is too high. The current process for establishing ranges operates three years in arrears. For a dying account such as Circuit - Analog, three years is very significant. At a minimum, the lower bound of the range for this account must be lowered by three years to reflect reality to a life of no more than five years.

E. Metallic Cable

The lower bound for the range of lives for metallic cable accounts must be significantly lower than has been proposed in the Order. This conclusion is supported by TFI's research discussed above in Section IV-(C), Circuit - Digital.[13] This research analyzed demand for new telecommunications services and impacts on the current telecommunications network. Table E shows that the vast majority of these services will be provided on fiber in the future and that all existing metallic cable is expected to be out of service by 2015.[14] Given this forecast, a life for metallic cable accounts of greater than 20 years is unwarranted.

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[13]L.K. Vanston (Technology Futures, Inc.), New Telecommunications Services and the Public Telephone Network, 1993.

[14]Many industry observers believe that this table represents a very conservative view of LEC fiber deployment in the distribution network.

TABLE E

OUTSIDE PLANT FORECAST - PERCENT OF CIRCUITS OF ACCESS LINES SERVED ON FIBER

Year:	1995	2000	2005	2010	2015
Interoffice	95%	100%	100%	100%	100%
Feeder	20%	70%	96%	99%	100%
Distribution	<1%	3%	27%	85%	100%

Source: New Telecommunications Services and the Public Telephone Network, by L.K. Vanston, Technology Futures, Inc., 1993.

These study conclusions are consistent with industry plans, strategies and announcements. The telephone industry is entering a period of massive change, including convergence with the cable TV industry. Virtually, all cable and telephone companies are testing new transmission technologies and deploying fiber throughout their networks. Companies are following strategies for broadband service delivery that require that existing copper investment be phased-out of telecommunications networks.

Because most of Buried Cable - Metallic is distribution plant, 20 years is an appropriate life for that account. Lives for Aerial- and Underground - Metallic Cable accounts face conditions that dictate shorter lives. Aerial cable is impacted by weather and elements that increase operating cost, lower service quality and shorten its life. A 15-year life is appropriate for Aerial Cable - Metallic. Underground metallic cable is located primarily in urban and suburban areas where competitive threats are greatest. In addition, a significant portion of the account is interoffice cable that is being replaced with fiber. A 15-

year life is appropriate for the lower bound of the range for Underground Cable - Metallic.

F. Fiber

U S WEST recommends that the Commission establish a range for fiber which allows LECs to use a 20-year life. The Commission has allowed the American Telephone and Telegraph Company ("AT&T") to use a 20-year life for fiber and there is no justifiable reason for not allowing LECs to use a similar life. AT&T and LECs use basically the same technology. If anything, LECs deserve a shorter life since their fiber investment faces more physical risk.

A less obvious but more important reason for allowing LECs to use a 20-year life for fiber has to do with the medium itself. Unlike metallic cable, which is made from an element, fiber is a thread of glass.[15] At this relatively early stage in the use of glass as a network communications medium, the technology continues to evolve.

The search for the optimal composition of fiber continues. Manufacturers continue to develop advances in the properties of fiber to improve flexibility, strength, clarity, transmission quality, reflectivity, refractivity and durability. Research is going on today for the development of new kinds of polymer fiber, that is, plastic fiber. Such an advance suggests an alternative

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[15]Glass is a compound made of a mix of several materials that, when blended in varying proportions, produce varying properties.

technology with life-limiting implications for current glass fiber. Additionally, manufacturing standards and tolerances are more tightly restricted today in order to produce fiber with improved properties. In some instances U S WEST is replacing earlier generations of fiber with new fiber that meets today's higher standards.

These trends in manufacturing and technology improvements are expected to continue as telephone networks come to depend on fiber as the primary transmission medium in an environment where broadband services predominate.

With this reliance on fiber, transmission quality will be critical. Over time, splices, cracks, strains, and leaching from moisture, chemicals and the atmosphere, as well as other aging effects will lead to a degradation in transmission quality. Based on these considerations and work that has been done at Corning and Bell Communications Research ("Bellcore"), a life of no more than 20 years should be set for the lower bound of the range for fiber.[16]

This conclusion is confirmed by reviewing the lives being used by other companies. LEC fiber is subject to many of the same influences as fiber used by other companies. Table F below suggests a range of lives significantly lower than the currently-prescribed 30-year life.

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[16]See Generic Requirements for Optical Fiber and Optical Fiber Cable, Bellcore Technical Advisory, Issue 8, Dec. 1991; Craig M. Lemrow, How Much Stress Can Fiber Take?; Telephony, May 23, 1988.

TABLE F

Interexchange Carriers	20
Domestic Cable Companies[17]	10-15
International Telcos*	
Japan	10
France	10
United Kingdom	20
*Source: CTN Research	

V. CONCLUSION

U S WEST recommends that the Commission adopt realistic forward-looking lives for all investment accounts. If the Commission declines to do so at this time, it should: 1) establish ranges for all accounts; 2) expand its proposed ranges to include all currently-prescribed lives; and 3) recalculate its proposed ranges using only the most current prescriptions. These

[17]TCI, which began fiber deployment back in 1988 and was the third largest user of fiber in the United States in 1992, computes its depreciation for distribution systems, of which fiber is a significant part, using estimated useful lives of 5 to 15 years. See Tele-Communications, Inc. Annual Report 1992, at 4, 37.

three steps are the minimum necessary to make the Basic Factors Range option something more than "business as usual."

Respectfully submitted,

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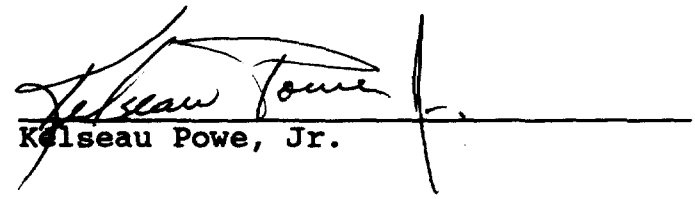
December 17, 1993

CERTIFICATE OF SERVICE

I, Kelseau Powe, Jr., do hereby certify that on this 17th day of December, 1993, I have caused a copy of the foregoing **COMMENTS OF U S WEST COMMUNICATIONS, INC.**, to be served via first-class United States Mail, postage prepaid, upon the persons listed on the attached service list.



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